

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

NORTH DAKOTA STATE UNIVERSITY
AGRICULTURAL EXPERIMENT STATION

SOUTH DAKOTA STATE UNIVERSITY
AGRICULTURAL EXPERIMENT STATION

and

UNIVERSITY OF MINNESOTA
AGRICULTURAL EXPERIMENT STATION

NOTICE TO NURSERYMEN OF THE NAMING AND RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY.

'SAKAKAWEA' silver buffaloberry Shepherdia argentea (Pursh) Nutt. is a seed propagated cultivar recommended for use in farmstead and multi-row field windbreaks, wildlife habitat, and natural area plantings associated with revegetation of surface mined lands, transportation and transmission corridors, flood plains, and other drastically disturbed areas.

'Sakakawea' is a densely branched, suckering shrub with a mature plant height of 12-16 feet (376-488 cm). The leaves are opposite, simple, oblong with both surfaces covered with silvery peltate scales, often with reddish brown centers. Silver buffaloberry is dioecious, blooming in April-May, fruit ripening in September. The fruit, an achene, is predominantly red; however, an estimated 15-20 percent of 'Sakakawea' female plants may produce yellow fruit.

'Sakakawea' originated from open-pollinated seed collected September 22, 1954 from a yellow fruited female cultivar 'Goldeye' at the Canada Department of Agriculture, Research Stations, Morden, Manitoba, Canada. The yellow-fruited silver buffaloberry was found in 1918 by Mr. A. Griffin, Brooks, Alberta, along the banks of the Red Deer River, Township 22, Range 12. It was given the cultivar name 'Goldeye' by Griffin in 1932. The tree from which SCS collected seed (September 22, 1954) was received by the Research Station, Morden, Manitoba in 1941. Ten seedlings grown from this seed collection were planted on the USDA, Soil Conservation Service, Plant Materials Center, Increase Block, Bismarck, North Dakota in 1957. This planting has been designated the breeder seed source. Open pollinated seed from this planting will be used to grow foundation stock.

The USDA, Soil Conservation Service has evaluated the adaptation and performance of 'Sakakawea' as ND-10 (6158T) (PI-478005) silver buffaloberry at Plant Materials Centers located at Bismarck, North Dakota; Bridger, Montana; Manhattan, Kansas; East Lansing, Michigan; and Elsberry, Missouri. Field evaluation studies were conducted cooperatively with North Dakota State University, Bottineau Branch; South Dakota State University, Central Research Station, Highmore; University of Minnesota, West Central Experiment Station, Morris; USDI, Fish and Wildlife Service, Lake Andes NWR, Lake Andes, South Dakota; North Dakota Game and Fish Department, McKenzie Slough Game Management Area, Burleigh Co., North Dakota; and other state and federal agencies, and conservation district cooperators.

'Sakakawea' is a cultivar selected on basis of good to excellent stand establishment and survival (longevity), uniformity of growth form, and excellent seed production. It is equal to or superior to common silver buffaloberry in these characteristics.

'Sakakawea' has performed well on a wide range of soils and the climatic conditions typical of the Northern Great Plains, (Jacobson, E. T. and Haas, R. J. Data to Support Release of 'Sakakawea' silver buffaloberry, 1983). The results of these studies and others in adjacent states indicate that 'Sakakawea' is primarily adapted for planting in the Northern Great Plain states: North Dakota, South Dakota, Montana, Wyoming, Nebraska and Minnesota as shown in Figure 1. Its use is not currently recommended beyond this area.

The **USDA**, Soil Conservation Service, Plant Materials Center, P.O. Box 1458, Bismarck, North Dakota 58502, will maintain breeder seed and foundation stock of 'Sakakawea' silver buffaloberry. Certified seed (source identified and selected class) will be available from growers approved by State Certified Seed Departments. Standards for all classes of seed are published in the North Dakota Tree and Shrub Certification Standards, North Dakota State Seed Department, Fargo, North Dakota, 1974.

Director

Thomas R. Shillet

Ecological Sciences Division
United States Department of Agriculture
Soil Conservation Service
Washington, D.C.

3/12/84

Date

State Conservationist

J. Michael Kethery
United States Department of Agriculture
Soil Conservation Service
Bismarck, North Dakota

JAN 12 1984

Date

Director

H. Rhind
North Dakota State University
Agricultural Experiment Station
Fargo, North Dakota

1-16-84

Date

State Conservationist

L. D. Jensen
United States Department of Agriculture
Soil Conservation Service
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1-23-84

Date

Director

R. A. Moore
South Dakota State University
Agricultural Experiment Station
Brookings, South Dakota

1-26-84

Date

State Conservationist

Ronald S. Lissen
United States Department of Agriculture
Soil Conservation Service
St. Paul, Minnesota

2-10-84

Date

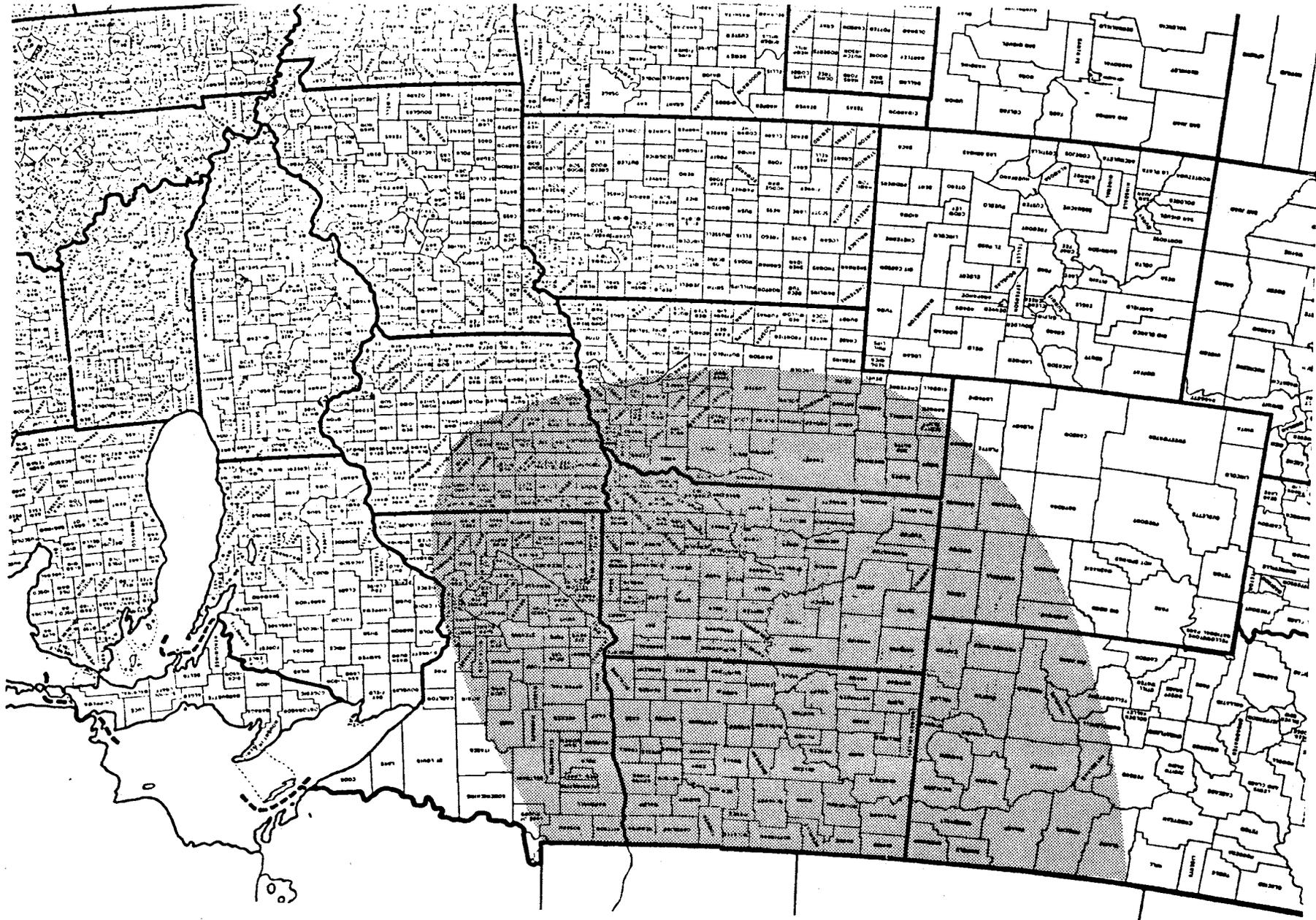
Director

Richard J. Sauer
University of Minnesota
Agricultural Experiment Station
St. Paul, Minnesota

2-17-84

Date

Fig. 1 Area of adaptation 'Sakakawa' silver butfaloberry, *Shepherdia argentea* (Pursh) Nutt.



DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

Cultivar: 'Sakakawea'

Accession No.: ND-10, 6158T, PI-478005

Common Name: Silver buffaloberry

Scientific Name: *Shepherdia argentea* (Pursh) Nutt. Symbol: SHAR (USDA, SCS, 1982)

Description: 'Sakakawea' silver buffaloberry is a densely branched shrub, 12-16 feet (366-488 cm) height. The bark is gray-brown, exfoliating into long, thin strips. The bark of the main branches have shallow furrows and flat topped ridges and the smaller branches are gray-brown and smooth. The leaves are opposite, simple, oblong, 3-5 cm long, 7-10 mm wide; tip rounded, base cuneate; margin entire; both surfaces covered with silvery, peltate scales about 0.2 mm across, the scales often with a reddish center; petiole 4-6 mm long covered with scales; no stipules. The lateral veins are indistinct. 'Sakakawea' is dioecious, blooming in April. Staminate flowers are clustered on short spur branches, sessile or on scaly pedicels about 1 mm long. Pistillate flowers are on stout pedicels 1-1.2 mm long. The fruit, an achene enveloped in a fleshy perianth, ripens in September as a drupe-like ovoid fruit 1/8" to 1/4" (3-6 mm) diameter. The fruit is predominantly red; however, an estimated 15-20 percent of the female plants may produce yellow fruit. Silver buffaloberry is capable of fixing nitrogen via root bearing nodules.

Origin: Silver buffaloberry occurs naturally in the Northern Great Plains and Prairie Provinces as dense thickets along streams, on moist hillsides and bottomlands. This selection of silver buffaloberry has been evaluated as ND-10 (6158T) (PI-478005) by the USDA, Soil Conservation Service, Plant Materials Center (PMC), Bismarck, North Dakota. It originated from open-pollinated seed collected September 22, 1954 from the cultivar 'Goldeye' at the Canada Department of Agriculture, Research Station, Morden, Manitoba, Canada. Ten seedlings grown from this seed collection were planted in 1957 for initial evaluation at the Bismarck Plant Materials Center; and open pollinated seed from this planting and from the original planting located at the Research Station, Morden, Manitoba have been used to produce seedlings for field testing. The following excerpt documents the origin of 'Goldeye' silver buffaloberry: "The yellow-fruited buffaloberry was found by Mr. A. Griffin, Brooks, Alberta, along the banks of the Red Deer River, Township 22, Range 12. He collected some rooted suckers in 1918 and again in 1922 from this tree. It was given the cultivar name 'Goldeye' by Griffin in 1932 and the tree from which you collected seed was sent to us by Griffin in 1941", (Personal Correspondence, 1972).

Uses: 'Sakakawea' is a seed propagated cultivar recommended for use as a tall shrub in wildlife habitat plantings and the outside rows of farmstead windbreaks and multi-row field windbreaks. This plant is a very important mule deer browse. The thorny thickets formed by this plant create ideal habitat for many bird and animal species. It is highly recommended for use in natural area plantings associated with revegetation of surface mined lands, transportation and transmission corridors, flood plains and other drastically disturbed areas.

Performance: The USDA, Soil Conservation Service has evaluated the adaptation and performance of **ND-10 (6158T) (478005)** and other accessions of silver buffaloberry for windbreak, wildlife habitat and other natural area plantings in the Central and Northern Great Plains and Corn Belt States. Initial evaluation studies (Table 1, 2, 3, 4 and 5) were conducted at the Plant Materials Centers located at Bismarck, North Dakota; Bridger, Montana; Manhattan, Kansas; East Lansing, Michigan; and Elsberry, Missouri. The results of these studies indicate that ND-10 silver buffaloberry is primarily adapted to the Northern Great Plains states of North Dakota, South Dakota, Eastern Montana and Western Minnesota. Field evaluation studies are being conducted at off-center sites located on land provided by cooperating state and federal agencies, to further evaluate performance, soil and climatic adaptation. Refer to Tables 6, 7 and 8. The Soil Conservation Service has evaluated ND-10 (**6158T**) (**478005**) and other accessions of silver buffaloberry on conservation district cooperators land for windbreak, and wildlife habitat purposes in North Dakota, South Dakota and Minnesota. The performance of these plantings is shown in Tables 9, 10, 11 and 12. The results of similar plantings in adjacent states Wisconsin, Michigan, Iowa and Missouri indicate only fair to poor performance, with a high percent of failure under field conditions.

'Sakakawea' appears to reach maturity at 15-20 years of age. The height at maturity ranges 12 to 16 feet (366-488 cm); crown width 16 to 19 feet (366-579 cm) with potential to form a dense thicket. Mean survival range is from 60 to 95 percent under field conditions, with good to excellent (90 percent) stands reported in several locations. Weed competition (perennial grasses) and shading (over-topping by tall trees) are important factors affecting performance. The establishment and rate of growth are also affected by adverse soil factors and drought. Seed production is rated good to excellent most years. There are no apparent insect problems. The following diseases are reported to occur on Shepherdia (Westcott 1950):

- Leaf spot. Cylindrosporium shepherdiae
Septoria shepherdiae
- Powdery mildew. Sphaerotheca castagnei
Sphaerotheca humuli
- Rust. Puccinia caricis-shepherdiae
- Heart rot. Fomes fraxinophilus
Phymatotrichum omnivorum

The susceptibility of ND-10 to disease organisms is not known. Incidence of heart rot on mature plantings has been reported. Further evaluations are needed to document the role disease may have in limiting the range of this species.

A progeny test of open-pollinated ND-10 seed was conducted to determine the ratio of red to yellow fruited female plants. Three hundred plants were planted in 1969 on the North Dakota Game and Fish Department, McKenzie Slough GMA, Burleigh Co., North Dakota. An excellent seed crop was produced on the 270 (90 percent) plants surviving in 1981. There were 137 (51 percent) male and 133 (49 percent) female. The fruit color of the female plants was 109 (82 percent) red, and 24 (18 percent) yellow.

The silver buffaloberry that is currently used by commercial nurseries is seed collected from untested native stands or windbreaks of unknown origin and performance. The purpose of releasing 'Sakakawea' silver buffaloberry, as certified seed, source identified or selected class, is to establish a standard of

known origin based on a field testing program to determine its area of adaptation and performance. Common silver buffaloberry is a thicket-forming, winter-hardy, drought-tolerant, alkali-tolerant, medium to tall, native shrub.

'Sakakawea' is a cultivar selected on basis of good to excellent stand establishment and survival (longevity), uniformity of growth form, and excellent seed production. It is equal to or superior to common silver buffaloberry in these characteristics.

Adaptation: The primary area of adaptation of 'Sakakawea' is in the Northern Great Plains Region (North Dakota-South Dakota) and the northern portion of the western Great Plains Region (Montana, Wyoming, South Dakota and Nebraska). Major Land Resource Areas: 53A, 53B, 53C - Dark Brown Glaciated Plains; 54 - Rolling Soft Shale Plain; 55A, 55B, 55C - Black Glaciated Plains; 56 - Red River Valley of the North; 58A, 58B, 58C, 58D - Northern Rolling High Plains; 60A, 60B - Pierre Shale Plains; 61 - Black Hills Foothills; 63A, 63B - Southern Rolling Pierre Shale Plains; 64 - Mixed Sandy and Silty Tableland; 65 - Nebraska Sandhills, and 66 - Dakota-Nebraska Eroded Tableland.

'Sakakawea' has performed in a satisfactory manner in the northwestern portions of the Central Feed Grains and Livestock Region (South Dakota, Iowa and Minnesota) and western portions of the Northern Lake State Forest and Forage Region (Minnesota). Major Land Resource Areas: 102A - Rolling Till Prairie; 102B - Loess Uplands and till plains; 103 - Central Minnesota till prairie; 57 - Northern Minnesota Gray Drift; 91 - Minnesota Sand Outwash.

'Sakakawea' is not recommended beyond these Land Resource areas. The physical features are described in Land Resource Regions and Major Land Resource Areas of the United States (USDA, SCS, 1981).

Soils: 'Sakakawea' is currently recommended for planting on soils that are in USDA, Soil Conservation Service, Technical Guide, Windbreak Suitability Group 1 (deep, fine to moderately fine textured, well drained) through Group 9 (moderately deep, somewhat poorly drained with claypan subsoils). It is not recommended for planting on North and South Dakota Group 7 (moderately deep, coarse textured, excessively drained soils with very low available water capacity and moderate permeability), and Minnesota WSG-2K (soils with free carbonates and are normally moderately or mildly alkaline within 20 inches of the surface), WSG-2W (poorly drained, depressional soils subject to ponding), and WSG-20 (poorly drained, depressional soils with organic materials more than 16 inches thick).

Climate, Elevation and Topography: The average annual precipitation of the area of adaptation for 'Sakakawea' ranges from 10-30 inches (25.4 to 76.2 cm) increasing from west to east, with the highest amount occurring during the growing season. Winter precipitation is snow, which accumulates in drifts of varying depths modifying the micro-climate in windbreaks. The average annual temperatures range from 40-50°F (4 to 10°C). Average frost free period is 100 to 160 days. The plant hardiness zones (USDA, ARS, 1960) include 3a, 3b, 4a and 4b with average annual minimum temperatures that range from -40 to -20°F. The elevation ranges from 1,000 to 4,000 feet (300 to 1200 m) increasing from east to west. The glacial plain is nearly level to gently rolling with hilly to steep slopes bordering the Missouri River and its major tributaries and streams.

Propagation: 'Sakakawea' is a seed propagated cultivar.

Collection of Fruit: Fruits are ripe when they turn red or yellow, this is usually in September. They may be collected by stripping or flailing them from the bushes onto a canvas tarp, or they can be picked by hand. Heavy gloves should be worn to reduce injury from the thorns. Care should be taken to prevent heating (Bonner 1974).

Extraction and Storage of Seed: After twigs, leaves, and other debris have been removed by screening or fanning, the fruit can be depulped by wet maceration and the pulp floated off. Seed should be kept clean and dry. 15 pounds (7 kg) of fruit will yield approximately 1 pound (454 g) of clean seed with an average of 38,000 seeds per pound. Dry, clean seed stores well in sealed containers at 41°F (5.0°C). It may be planted in the fall, or stratified 90 days in damp sand at 41°F (5.0°C) and planted in the spring. Plant at a rate of 30-50 viable seeds per linear foot of row. Seeds should be covered with 1/4 inch (6.3 mm) of soil. Straw mulch about 1/2 to 1 inch (13-25 mm) deep helps protect the planting. About 50 percent of the viable seeds sown produce usable 1-0 seedlings. Field planting stock should be 2-0 with a height of 12-24 inch (30 to 60 cm) and a caliper at one inch (25.4 mm) above the root collar of 3/16 to 1/2 inch (5-13 mm) (Bonner 1974).

Sources of Seed and Planting Stock: The USDA, Soil Conservation Service, Plant Materials Center, P.O. Box 1458, Bismarck, North Dakota 58502, will maintain breeders seed and foundation stock of 'Sakakawea' silver buffaloberry. Certified seed (source identified and selected class) will be available from growers approved by the State Certified Seed Departments, Standards for all classes of seed are published in the North Dakota Tree and Shrub Certification Standards (North Dakota State Seed Department 1974).

References:

Bonner, F. T. 1974. Seeds of woody plants of the United States, Shepherdia Nutt. silver buffaloberry. USDA, Forest Service Handbook, 450:771-773.

North Dakota State Seed Department. 1974. North Dakota tree and shrub standards, supplement to Bul. 51-T, March 1974, 14 p.

Personal Correspondence, 1972. John McDermand, Plant Materials Specialist, USDA, SCS, Bismarck, ND from W. A. Cumming, Head, Ornamentals & Fruit Crops, Canada. Dept. of Agric., Res. Sta., Morden, Manitoba, Canada. March 7, 1972. 'Goldeye' silver buffaloberry Shepherdia argentea Nutt.

USDA, Agricultural Research Service. 1960. Plant hardiness zone map. USDA Misc. Publ. 814.

USDA, Soil Conservation Service. 1981. Land Resource Regions and Major Land Resource Areas of the United States, Agric. Handbook 296, 156 p., map revised September, 1978.

USDA, Soil Conservation Service. 1982. National List of Scientific Plant Names. SCS-TP-159, Vol. 1, 416 p.

Westcott, C. 1950. Plant Disease Handbook, D. Van Nostrand Co., Inc. New York. 746 p.

Prepared by: The data to support release of 'Sakakawea' silver buffaloberry was assembled by Erling T. Jacobson, Plant Materials Specialist and Russell J. Haas. Plant Material Center Manager, USDA, Soil Conservation Service, Bismarck, North-Dakota, August 1983.

TABLE 1 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY
 PROJECT PLAN NO. 38F010
 USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. ND-10, 6158T, 478005

504 - ST - 38 - NORTH DAKOTA

517 - PURPOSE - WNR/WLDF - FIELD EVALUATION PLANTINGS

506	507	509	505	503		520	501		518	NO	532		553		525	627	
<u>MLBA</u>	<u>SOIL</u>	<u>TEX</u>	<u>WSG</u>	<u>COUNTY</u>	<u>COOP</u>	<u>PLOT</u>	<u>DATE</u>	<u>YR</u>	<u>NO</u>	<u>PLT</u>	<u>PCT</u>	<u>552</u>	<u>CRN</u>	<u>V</u>	<u>WD</u>	<u>ERO</u>	
						<u>LOC</u>	<u>PLT</u>	<u>RC</u>	<u>AGE</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>I</u>	<u>COMP</u>	<u>ADP</u>
053B	Havrelon	SICL	1	Burleigh	USDA, SCS, PMC, Bismarck, ND	51-5	4-29-57	60	3	10	10	100		1	1	1	
					Lincoln-Oakes Nursery			61	4	10	10	100	9.0	7.0	1	1	1
					Increase Block			62	5	10	10	100	10.0	9.0	1	1	1
					Source: Seed collection - September 22, 1954			63	6	10	10	100	11.2	10.0	1	1	1
					Canada Department of Agriculture,			64	7	10	10	100	11.0	11.0	1	1	1
					Research Station, Morden, Manitoba,			65	8	10	10	100	11.5	12.0	1	1	1
					Canada			66	9	10	10	100	11.5	10.0	1	1	1
								67	10	10	10	100	11.5	10.0	1	1	1
					558	559		68	11	10	10	100	14.0	12.0	1	1	1
					FLW	FRU		70	13	10	10	100	15.0	13.0	1	1	1
					PER	ABU		71	14	10	10	100	16.0	16.0	1	1	1
					4/19-	3-		72	15	10	10	100	16.5	19.0	1	1	1
					5/10	5		76	19	10	10	100	17.5	19.3	1	1	1

TABLE 2 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

PROJECT PLAN NO. 38F010

USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. ND-10, 6158T, 478005

504 - ST - 30 - MONTANA

517 - PURPOSE - WNER/WLDF - FIELD EVALUATION PLANTINGS

506 <u>MLRA</u>	507 <u>SOIL</u>	509 <u>TEX</u>	509 <u>WSG</u>	505 <u>COUNTY</u>	503 <u>COORD</u>	PLOT <u>LOC.</u>	520 DATE <u>PLT</u>	501 YR <u>PC</u>	AGE	518 NO <u>PLTS</u>	NO PLT <u>SRV</u>	532 PCT <u>SRV</u>	552 WT	553 CRN <u>SPD</u>	V I	525 WD <u>COMP</u>	627 ERO <u>ADP</u>	
032	Havre	CL	1	Carbon	USDA, SCS, PMC, Bridger, MT													
<u>001 - ACC. NO.</u>		<u>SOURCE</u>																
	ND-10			USDA, SCS, PMC, Bismarck, ND		Fld. 19E	11/13/67	76 80	9 13	51 51	49 46	96 90	12.5 15.4	11.4 11.5	1 2	5 5	3 3	
	M-844			USDA, SCS, PMC, Bridger, MT Missoula State Forest Nursery, Missoula, MT	Standard of Comparison	Fld. 19E	04/26/66	76 80	10 14	10 10	8 8	80 80	12.9 13.6	13.1 11.1	1 3	5 5	3 5	
	M-834			USDA, SCS, PMC, Bridger, MT Carbon Co., MT	Standard of Comparison	Fld. 19E	03/24/67	76 80	9 13	81 81	59 53	73 65	11.9 14.7	11.3 12.2	1 2	5 5	3 3	
	Mich-1081 (ND-10) T06158			USDA, SCS, Rose Lake PMC, E. Lansing, Mich.		Fld. H South	05/17/76	80	4	10	7	70	-	-	1	5	3	
	Mich-1342 T05058			USDA, SCS, Rose Lake, PMC, E. Lansing, Mich		Fld. H South	05/17/76	80	4	10	3	30	-	-	1-3	5	5	

TABLE 3 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY
 PROJECT PLAN NO. 38F010
 USDA - SOIL CONSERVATION SERVICE

- 004 - GENUS SHEPHERDIA
- 005 - SPECIES ARGENTEA
- 001 - ACC. NO. **ND-10, 6158T, 478005**
- 504 - **ST - 20 - KANSAS**
- 517 - PURPOSE - **WNBR/WLDF - FIELD EVALUATION PLANTINGS**

<u>506</u>	<u>507</u>	<u>509</u>	<u>505</u>	<u>503</u>	<u>PLOT</u>	<u>520</u>	<u>501</u>	<u>518</u>	<u>NO</u>	<u>532</u>	<u>553</u>	<u>525</u>	<u>627</u>			
<u>MLRA</u>	<u>SOIL</u>	<u>TEX.</u>	<u>COUNTY</u>	<u>COOP</u>	<u>LOC.</u>	<u>DATE</u>	<u>YR</u>	<u>NO</u>	<u>PLT</u>	<u>PCT</u>	<u>552</u>	<u>CRN</u>	<u>V</u>	<u>WD</u>	<u>ERO</u>	
						<u>PLT</u>	<u>RC</u>	<u>AGE</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>I</u>	<u>COMP</u>	<u>ADP</u>
076	Haymie	VFSL	Riley	USDA, SCS, PMC, Manhattan, KS	Fld. F-1, Row 7, Plt 16-20	68	71	3	5	5	100	9.1- 9.7	8.6- 10.3	1	1	3
							72	4	5	5	100					
							73	5	5	5	100	11.5- 13.0	12- 14	1	1	3
							74	6	5	5	100	12.5- 13.5	17- 18	3	1	3
							75	7	5	5	100	12.9	16	3	1	3
							76	8	5	5	100	14.0	16.9	3	1	3
							77	9	5	-0-		Removed				

TABLE 4 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

PROJECT PLAN NO. 38F010

USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. ND-10, 6158T, Mich-1081, 478005

504 - ST - 26 - MICHIGAN

517 - PURPOSE - WNBR/WLDF - FIELD EVALUATION PLANTINGS

<u>506</u>	<u>507</u>	<u>509</u>	<u>505</u>	<u>503</u>	<u>PLOT</u>	<u>520</u>	<u>501</u>		<u>518</u>	<u>NO</u>	<u>532</u>		<u>553</u>		<u>525</u>	<u>627</u>
<u>MLPA</u>	<u>SOIL</u>	<u>TEX</u>	<u>COUNTY</u>	<u>COOP</u>	<u>LOC.</u>	<u>DATE</u>	<u>YR</u>	<u>AGE</u>	<u>NO</u>	<u>PLT</u>	<u>PCT</u>	<u>552</u>	<u>CRN</u>	<u>V</u>	<u>WD</u>	<u>ERO</u>
						<u>PLT</u>	<u>RC</u>		<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>I</u>	<u>COMP</u>	<u>ADP</u>
098	Oshtemo	LS	Clinton	USDA, SCS, Rose Lake	PMC											
				E. Lansing, Mich.												
001 - ACC. NO				Origin/ Source												
Mich-1081				USDA, SCS, PMC, Bismarck, ND	Site #1	65	71	6	25	13	52	6.0	3.0	5	7	
ND-10				(Vegetative)	PMC		72	7	25	13	52	6.0	4.0	3	7	
(6158T)							76	11	25	11	44	8.0- 10.0		5	7	7
Mich-1342				USDA, SCS, Rose Lake	E. of	70	71	1	25	22	88	20	20	3	1	
				E. Lansing, Mich.	Johnson		72	2	25	22	88	3.0	20	3	1	
				Orange Area	House		77	7	25	16	64	4.2	3.6	3	7	7
MI-7748				USDA, SCS, PMC, Standard of Comparison	E. of	70	71	1	25	18	72	1.2	2.0	3	1	
				Elsberry, Missouri	Yeoman			72	2	25	18	7.2	3.0	1.5	3	1
					Tract		77	7	25	20	80	3.0	2.4	3	7	7

TABLE 5 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

PROJECT PLAN NO. 38F010

USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. ND-10, 6158T, MI-7038, 478005

504 - ST - 29 - MISSOURI

517 - PURPOSE - WNBR/WLDF - FIELD EVALUATION PLANTINGS

506	507	509	505	503	520	501	518	NO	532	553	525	627				
<u>MLRA</u>	<u>SOIL</u>	<u>TEX</u>	<u>COUNTY</u>	<u>COOP</u>	<u>PLOT</u>	<u>DATE</u>	<u>YR</u>	<u>NO</u>	<u>PCT</u>	<u>552</u>	<u>CRN</u>	<u>V</u>	<u>WD</u>	<u>ERO</u>		
					<u>Lac.</u>	<u>PLT</u>	<u>RC</u>	<u>AGE</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>I</u>	<u>COMP</u>	<u>ADP</u>
116	Menfro	SIL	Lincoln	USDA, SCS, PMC, Elsberry, Missouri Project No. 2910625												

<u>001 - ACC. NO.</u>	<u>SOURCE</u>													
ND-10	USDA, SCS, PMC, Bismarck, ND	8-1	4/26/65	65	0	25	10	40	2.0	0.5	-	3	-	
MI-7038				66	1	25	10	40	2.0	1.0	-	3	-	
				67	2	25	11	44	3.5	2.5	3	5	5	
				68	3	25	11	44	7.5	3.5	3	5	5	
				69	4	25	11	44	7.5	3.5	3	5	5	
				70	5	25	11	44	10.0	5.0	3	5	5	
				71	6	25	11	44	12.0	9.0	3	5	5	
				72	7	25	11	44	12.5	9.5	3	5	5	
				73	8	25	11	44	12.5	10.0	3	5	5	
				74	9	25	11	44	13.0	10.5	3	5	5	
				75	10	25	11	44	13.0	11.0	3	7	5	
				77	12	25	9	36	15.0	14.0	5	7	7	1/
				79	14	25	9	36	16.1	15.1	7	7	7	1/
MI-695	USDA, SCS, PMC (Standard of Comparison)	8-1	63	67	4	25	18	72	6.0	4.0	3	5	3	
MI-6566	E. Lansing, Mich. F. W. Schumacher Seed Co. Sandwich, Mass.			75	12	25	17	68	13.0	10.0	3	7	5	
Mich-822	USDA, SCS, PMC (Standard of Comparison)	8-1	3/66	67	1	25	21	84	2.5	1.7	1	5	3	
MI-7278	E. Lansing, Mich. F. W. Schumacher Seed Co. Sandwich, Mass.													

1/ This accession (ND-10) has never produced fruit at this location, evaluation discontinued.

TABLE 6 DATA TO SUPPORT RELEASE OF SAKAKAWEA SILVER BUFFALOBERRY

PROJECT PLAN NO. 38F010

USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. ND-10, 6158T, 478005

504 - ST - 38 - NORTH DAKOTA

517 - PURPOSE - WNBR/WLDF - FIELD EVALUATION PLANTINGS

506	507	509	505	503		520	501		518	NO	532		553	525	627		
<u>MLRA</u>	<u>SOIL</u>	<u>TEX</u>	<u>WSG</u>	<u>COUNTY</u>	<u>COOP</u>	<u>PLOT</u>	<u>DATE</u>	<u>YR</u>	<u>AGE</u>	<u>NO</u>	<u>PLT</u>	<u>PCT</u>	552	CRN	V WD	ERO	
						<u>LOC.</u>	<u>PLT</u>	<u>RC</u>		<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>I</u>	<u>COMP</u>	<u>ADP</u>
053B	Savage	SIL	3	Burleigh	ND, G&FD, McKenzie Slough GMA, McKenzie, ND Project No. 38I302K	I/07/N-S	05/24/73	82	9	6	5	83	11.1	13.2	3	1	1

STANDARDS OF COMPARISON

001 - Acc. No.

Source

Mich-1342
5058T

USDA, SCS, PMC
E. Lansing, Mich

II/15/N-S

05/15/75

82

7

5

5

100

9.8

10.9

3

1

1

ND-1420
615931

Slope Co., ND

II/15/N-S

05/24/78

82

4

6

6

100

7.5

8.5

3

1

1

ND-1421
6160T

Billings Co., ND

II/16/S-N

05.24.78

82

4

3

3

100

6.8

7.3

3

1

1

ND-1422
6161T

Mercer Co., ND

II/15/N-S

05/24/78

82

4

7

7

100

8.7

8.9

3

1

1

ND-1423

Dunn Co., ND

11/16/S-N

05/24/78

82

4

2

2

100

7.8

8.2

4

1

1

TABLE 6A DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY
 PROJECT PLAN NO. 38F010
 USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. ND-10, 6158T

504 - ST - 38 - NORTH DAKOTA

517 - PURPOSE - WNR/WLDF - FIELD EVALUATION PLANTINGS

506 <u>MLRA</u>	507 <u>SOIL</u>	509 <u>TEX</u>	509 <u>WSG</u>	505 <u>COUNTY</u>	503 <u>COOP</u>	<u>PLOT</u> <u>LOC.</u>	520 <u>DATE</u> <u>PLT</u>	501 <u>YR</u> <u>RC</u>	518 <u>NO</u> <u>PLTS</u>	NO <u>PLT</u> <u>SRV</u>	532 <u>PCT</u> <u>SRV</u>	552 <u>HT</u>	553 <u>CRN</u> <u>SPD</u>	525 <u>V</u> <u>I</u>	627 <u>WD</u> <u>COMP</u>	627 <u>ERO</u> <u>ADP</u>	
055A	Svea-Hammerly	L	1-1	Benson	Herman Bros. Farm, Brinsmade, ND Project No. 38I305K	1/08/W-E	05/15/73	82	9	4	2	50 ^{1/}	4.5	2.6	8	7	3
055A	Barnes-Aastad	L-CL	3-1	Bottineau	NDSU, Bottineau Branch Bottineau, ND Project No. 38I308K	1/07/N-S	05/15/74	82	8	5	5	100	13.6	11.5	4	1	1
054	Stady	L	6	Morton	Sweet Briar Rec. Area Morton Co., ND Project No. 38I323K	1/03/1-5	73	82	9	5	3	60	14.4	9.6	3	1	1

^{1/} Damaged by fire in 1979.

TABLE 7 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

PROJECT PLAN NO. 38F010

USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. **ND-10**, 6158T, 478005

504 - ST - 46 - SOUTH DAKOTA

517 - PURPOSE - WNBW/WLDF - FIELD EVALUATION PLANTINGS

<u>MLRA</u>	<u>SOIL</u>	<u>TEX</u>	<u>WSG</u>	<u>COUNTY</u>	<u>COOP</u>	<u>PLOT</u> <u>LOC.</u>	520 DATE <u>PLT</u>	501 YR <u>RC</u>	AGE	518 NO <u>PLTS</u>	NO PLT <u>SRV</u>	532 PCT SRV	552 HT	553 CRN SPD	V <u>I</u>	525 WD COMP	627 ERO ADP
055C	Highmore	SIL	3	Charles Mix	USDI, FWS, Lake Andes NWR, Lake Andes, SD Project No. 38I314K	2A-6/1-20	04/19/78	82	4	20	20	100	8.3	9.2	1	1	1
053C	Williams	SIL	3	Hyde	SDSU, CRS, Highmore, SD Project No. 38I315K	3/0811-10	04/11/78	82	4	10	10	100	7.2	8.6	1	1	1
060A	Kyle	C	4	Jackson	USDA, FS, Buffalo Gap National Grassland, Cottonwood, SD Project No. 38I319K	1/03/1-10	04/25/79	82	3	10	8	80	2.1	1.7	3	1	3

TABLE 8 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY
 PROJECT PLAN NO. **38F010**
 USDA - SOIL CONSERVATION SERVICE

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

001 - ACC. NO. **ND-10, 61581, 478005**

504 - **ST - 27 - MINNESOTA**

517 - PURPOSE - WNBK/WLDF - FIELD EVALUATION PLANTINGS

<u>506</u>	<u>507</u>	<u>509</u>	<u>505</u>	<u>503</u>	<u>PLOT</u>	<u>520</u>	<u>501</u>	<u>518</u>	<u>NO</u>	<u>532</u>	<u>553</u>	<u>525</u>	<u>627</u>				
<u>MLRA</u>	<u>SOIL</u>	<u>TEX</u>	<u>WSC</u>	<u>COUNTY</u>	<u>COOP</u>	<u>DATE</u>	<u>YR</u>	<u>NO</u>	<u>PLT</u>	<u>PCT</u>	<u>552</u>	<u>CRN</u>	<u>V</u>	<u>WD</u>	<u>ERO</u>		
						<u>PLT</u>	<u>RC</u>	<u>AGE</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>I</u>	<u>COMP</u>	<u>ADP</u>	
102A	Barnes- Buse	L	3- 8	Stevens	UM, WCES, Morris, MN Proj. No. 38I318K	1/07/1-20	05/10/78	82	4	20	20	100	7.9	7.8	3	1	1

TABLE 9 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

USDA - SOIL CONSERVATION SERVICE

PROJECT PLAN NUMBER 38F010

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

SILVER BUFFALOBERRY

001 - ACC. NO. ND-10, 6158T, 478005

504 - ST - 38 - NORTH DAKOTA

517 - PURP - WNBR/WLDF

506	507	509		ADM	505		FIELD	503	520		518	NO	532		553		525	526	627			
MLRA	SOIL	FW	WSC	AREA	CNT	COUNTY	OFFICE	COOP.	DATE	YR	547	NO	PLT	PCT	552	CRN	555	WD	WD	ERO		
					NO				PLT	RC	DSTRY	AGE	PLTS	SRV	SRV	HT	SPD	WIDTH	COMP	CONT	ADP	
053B	Savage	SICL	3	4	015	Burleigh	Bismarck	NDG&F±/		69	81	N	12	300	270	90	11.3	9.0	4.5	1	3	1
053B	Mandan	SIL	3	4	015	Burleigh	Bismarck	Riskedahl, B.	05-25-74	81	N	7	75	71	94	12.5	7.2	4.5	1	1	1	
053B				4	015	Burleigh	Bismarck	Hochhalter, M.	05-09-74	81	Y	7	100	0	-	-	-	-	-	-	-	
053B	Temvik	SL	3	4	015	Burleigh	Bismarck	Benson, D.	05-22-75	81	N	6	25	21 ^{2/}	84	6.5	8	4.5	1	1	1	
053B	Williams L		3	4	055	McLean	Washburn	Scholl, H.	05-23-57	81	N	24	45 ^{2/}	30	66	12.8	9.5	16.4	9	9	3	
053B				4	055	McLean	Washburn	Flinn, D.		57	81	Y	24	120	0	-	-	-	-	-	-	
053B	Williams L		3	4	055	McLean	Washburn	Kurle, F.	05-07-57	81	N	24	53	25	47	13.8	10.2	20.5	9	0	3	
053B	Williams L		3	4	055	McLean	Washburn	Kraft, W.	05-06-58	81	N	23	50	50	100	15.4	16.9	11.6	9	0	3	
053A	Williams	SIL	3	3	023	Divide	Crosby	Olson, H.	05-04-73	81	N	8	23	10	44	5.0	4.5	18	9	9		
054	Vebar	FSL	5	5	001	Adams	Hettinger	Kerzman, R.	04-29-77	81	N	4	24	18	76	1.7	1.6	-	9	9	3	
055B				2	081	Sargent	Forman	Pearson, G.	05-20-75	81	N	6	49	6	12	6.6	6.2	9.8	9	0	-	
055B	Aastad	L	1	2	081	Sargent	Forman	Sargent Central School Dist. #6	04-27-76	81	Y	5	24	0	-	-	-	-	-	-	-	
055A	Barnes	L	3	3	075	Renville	Mohall	Jensen, E.		57	81	N	24	110	107	97	16	11	15	5	7	1
055A	Barnes	L	3	3	075	Renville	Mohall	Krause, G.		57	81	N	24	90	67	74	12.5	10	20	3	3	3
055A	Overly-Exline	SICL	1-10	3	079	Rolette	Rolette	Lund, G.	05-04-65	81	N	16	303	177	58	9.5	10.5	19.7	9	0	1-9 ^{4/}	

TABLE 9 - CONT DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

USDA - SOIL CONSERVATION SERVICE

PROJECT PLAN NUMBER 38F010

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

SILVER BUFFALOBERRY

001 - ACC. NO. ND-10, 6158T, 478005

504 - ST - 38 - NORTH DAKOTA

517 - PURP - WNBR/WLDF

506	507	509		ADM	505		FIELD	503	520		518	NO	532		553		525	526	627		
<u>MLRA</u>	<u>SOIL</u>	<u>TEX</u>	<u>WSG</u>	<u>AREA</u>	<u>CNT</u>	<u>COUNTY</u>	<u>OFFICE</u>	<u>COOP.</u>	<u>DATE</u>	<u>YR</u>	<u>547</u>	<u>NO</u>	<u>PLT</u>	<u>PCT</u>	<u>552</u>	<u>CRN</u>	<u>555</u>	<u>WD</u>	<u>WD</u>	<u>ERO</u>	
					<u>NO</u>				<u>PLT</u>	<u>RC</u>	<u>DSTRY</u>	<u>AGE</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>WIDTH</u>	<u>COMP</u>	<u>CONT</u>	<u>ADP</u>
055A	Embden- Egeland	FSL	5- 5	3	079	Rolette	Rolette	Gilji, A. & S.	05-08-58	82	N	24	51	45	88	9.8	9.0	15.6	3	7	3
056	Bearden	SIL	1	1	035	Grand Forks	Grand Forks	Korynta, D.	05-14-65	81	N	16	105	63	60	13.3	17.4	17.4	9	9	3
056	Bearden	SIL	1	1	035	Grand Forks	Grand Forks	Dubuque, F.	57	81	Y	24	50	<u>3/</u>	-	11.5	10.8		1	3	3

1/ Source Identified Seed Class

2/ Lack positive ident.

3/ Partially removed

4/ 1-Overly, 9-Exline

TABLE 10 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

USDA - SOIL CONSERVATION SERVICE

PROJECT PLAN NO. 38F010

004 - GENUS SHEPERDIA

005 - SPECIES AGRENTEA

SILVER BUFFALOBERRY

001 - ACC. NO. ND-10, 6158'11, 478005

504 - ST - 46 - SOUTH DAKOTA

517 - PURP - WNBR/WLDF

506	507	509	ADM	505			520	501		518	NO	532		553		525	526	627						
MLRA	SOIL	TEX	WSC	AREA	NO	COUNTY	FIELD	503	547	NO	PLT	PCT	552	HT/	CRN	CS/	555	WD	WD	ERO				
							OFFICE	COOP	DSTRY	AGE	PLTS	SRV	SRV	HT	YR	SPD	YR	WIDTH	COMP	CONT	ADP			
102A	Estelline	SIL	6	1	011	Brookings	Brookings	Crosser, L.		05-04-73	81	N	8	25	23	92	11	1.4	11	1.4	20	3	0	1
102A	Lamoure	SICL	2	1	011	Brookings	Brookings	Willmott, D.		04-30-73	81	N	8	100	60	60	7	.9	8	1.0	8	9	0	3
102A				1	025	Clark	Clark	Johnson, W.		04-30-58	81	Y	23	25	0	-	-	-	-	-	-	-	-	-
102A	Forman-Aastad	L	3-1	3	109	Roberts	Sisseton	White Rock ^{1/} Hutterian		05-29-68	81	N	13	50	48	96	14	1.1	14	1.1	14	3	0	1
102A	Forman-Buse	L	3-1	3	109	Roberts	Sisseton	Madenwald, D.		06-03-68	81	N	13	66	11	77	16	1.2	10	.8	20	3	0	1
102A	Poinsett-Sisseton	SIL	3-1	3	109	Roberts	Sisseton	Weeks, C.		06-14-68	81	N	13	105	100	95	14	1.1	14	1.1	25	9	0	1
102A	Forman-Aastad	L	3-1	3	109	Roberts	Sisseton	Dahl, O.		06-06-68	81	N	13	60	54	90	9	.7	9	.7	9	9	0	1
102A	Egeland	FSL	5	1	029	Codington	Watertown	Townsend, D.		05-23-74	81	N	7	150	143	95	9	1.3	7	1.0	3	1	3	1
053B	Maddock	LFS	5	4	021	Campbell	Herreid	Rau, E.		05-01-69	81	N	12	70	58	83	10	.8	6	.5	-	3	9	1
053C	Lowry	SIL	3	4	065	Hughes	Pierre	Jacobs, J.		05-15-74	81	Y	7	100	0	-	-	-	-	-	-	-	-	-
053C	Highmore	SIL	3	4	129	Walworth	Selby	Spindler, A.		05-02-73	81	N	8	100	60	60	7	.9	6	.8	3	9	0	1
055C	Houdek	SIL	3	2	003	Aurora	Mitchel	Matzner, A. ^{1/}		04-23-74	81	N	7	175	158	90	12	1.7	12	1.7	-	1	5	1
060A				5	033	Custer	Custer	Krueger, W.		04-25-70	81	Y	11	25	0	-	-	-	-	-	-	-	-	-
063	Promise	C	4	4	085	Lyman	Kennebec	Brakke Dam		04-27-73	81	N	8	50	30	60	5	.6	6	.8	6	3	0	3

^{1/} Source Identified Seed Class

TABLE 11 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY
 USDA - SOIL CONSERVATION SERVICE
 PROJECT PLAN NUMBER 38F010

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

SILVER BUFFALOBERRY

001 - ACC. NO. ND-10, 6158T, 478005

504 - ST - 27 - MINNESOTA

517 - PURP - WNBR/WLDF

506	507	509	ADM	505			503	520	518	NO	532	553	525	627									
<u>MLRA</u>	<u>SOIL</u>	<u>TEX</u>	<u>WGS</u>	<u>AREA</u>	<u>NO</u>	<u>COUNTY</u>	<u>FIELD</u>	<u>DATE</u>	<u>YR</u>	547	NO	PLT	PCT	552	CRN	555	WD	ERO					
							<u>OFFICE</u>	<u>PLT</u>	BC	DSTRY	AGE	DLTS	SRV	SRV	HT	SPD	WIDTH	COMP	ADP				
56	Colvin-Ulen	SIL	2K-1K	1	119	Polk	Crookston	Tupper, D.	05-12-69	81	N	12	102	80 ^{1/}	8	6	7	9	5				
88-2	Hubbard	SL	7	1	057	Hubbard	Park Rapids	James, D.	05-16-75	81	Y	10	0	-	-	-	-	-	-				
88-2	Menahga	LS	7	1	057	Hubbard	Park Rapids & A.	Zackowski, L.	04-24-73	81	Y	25	0	-	-	-	-	-	-				
90	Omega	LS		3	017	Carlton	Barnum	Knudson, M.	05-28-77	81	N	4	25	15	60	3-4	1-2	1	9	3-7			
91	Nymore	LS	7	2	159	Wadena	Wadena	Lageson, R.	05-02-74	81	N	7	10	6	6	0	8	5	-	3	3		
102A	Buse	L	8	5	073	Lac Qui Parle	Madison	Hegland, J.	05-70	81	N	11	51	31	60	10	5	-	-	3			
103	Gravel Pit	G	10	5	127	Redwood	Redwood Falls	Wittwer, L.	04-25-73	81	N	8	24	22	90	6	6	2	3	3			
103	Linder	SL	1	5	127	Redwood	Redwood Falls	Sogaard, E.	04-20-76	81	N	5	25	25	100	8	4	6	3	3			
103	Hubbard	FS	7	4	139	Scott	Jordan	Scott Co. Agr.	04-17-77	81	N	4	25	3	1	2	3	2	2	3	3		
103	Hayden	SL,S	3	4	139	Scott	Jordan	Altman, E.	04-18-74	81	N	7	2	5	6	2	5	6	4	2	0	3	1
104	Floyd	SICL	1	7	099	Mower	Austin	Angel, D.	04-24-73	81	N ^{2/}	8	25	12	50	3	1.5	-	1	3			

1/ 9-24-79, 80 percent

2/ Cancel - Destroy - 82.

TABLE 12 DATA TO SUPPORT RELEASE OF 'SAKAKAWEA' SILVER BUFFALOBERRY

USDA - SOIL CONSERVATION SERVICE

PROJECT PLAN NUMBER 38F010

004 - GENUS SHEPHERDIA

005 - SPECIES ARGENTEA

SILVER BUFFALOBERRY

001 - ACC. NO. Mich-1342, T05058 (Standard of Comparison)

SOURCE - USDA, SCS, PMC, E. LANSING, MICHIGAN

504 - ST - 27 - MINNESOTA

517 - PURP - WNR/WLDF

506	507	509	ADM	505	520	518	NO	532	553	525	627										
<u>MLRA</u>	<u>SOIL</u>	<u>TEX</u>	<u>WSG</u>	<u>AREA</u>	<u>CNT</u>	<u>NO</u>	<u>PLT</u>	<u>PCT</u>	<u>552</u>	<u>CRN</u>	<u>555</u>	<u>WD</u>	<u>ERO</u>								
					<u>COUNTY</u>	<u>FIELD</u>	<u>COOP.</u>	<u>DATE</u>	<u>YR</u>	<u>547</u>	<u>AGE</u>	<u>PLTS</u>	<u>SRV</u>	<u>SRV</u>	<u>HT</u>	<u>SPD</u>	<u>WDTH</u>	<u>COMP</u>	<u>ADP</u>		
056	Viking	C	K	1	113	Pennington	Thief River Falls	Noel, A.	06-06-72	81	N	9	25	9	35	14	6	10	3	7	
88-2	Hubbard	SL	7	1	057	Hubbard	Park Rapids	James, D.	05-16-75	81	Y	6	110	0	-	-	-	-	-	-	
090	Chetek	SCL	7	2	097	Morrison	Little Falls	Cushing Road Proj.	04-26-71	81	N	10	25	-	-	3	3	0	3	7	
090	Brainerd	SL	4F	2	097	Morrison	Little Falls	Meyer, C.	05-03-71	81	N	10	12	7	5	8	4	3	0	3	3
090	Brainerd	SL	4F	2	097	Morrison	Little Falls	Westre, B.	05-07-71	81	N	10	11	5	4	5	5	3	0	3	3
091	Nymore	LS	7	2	159	Wadena	Wadena	Lageson, R.	04-73	81	N	8	50	45	90	11	7	-	1	3	
102A	Buse	L	8	5	073	Lac Qui Parle	Madison	Hegland, J.	70	81	N	11	50	19	38	8	5	0	9	7	
102A	Buse	L	8	5	011	Big Stone	Ortonville	Stegner, V.	05-18-72	81	N	9	25	25	100	6	6	10	3	1	
103	Ester-ville	SL	7	5	127	Redwood	Redwood Falls	Sogaard, E.	04-20-76	81	N	5	25	25	100	7	4	6	3	3	